January 24, 2003

Mr. John L. Skolds
Chairman and CEO
AmerGen Energy Company, LLC
4300 Winfield Road
5th Floor
Warrenville, IL 60555

SUBJECT: OYSTER CREEK NUCLEAR GENERATING STATION - TRIENNIAL FIRE PROTECTION INSPECTION REPORT 50-219/02-011

Dear Mr. Skolds:

On January 10, 2003, the NRC completed a triennial fire protection inspection at your Oyster Creek Nuclear Generating Station. The enclosed report documents the inspection findings that were discussed on January 10, 2003, with Mr. E. Harkness and other members of your staff.

This inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations, and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARs) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

We appreciate your cooperation. Please contact me at (610) 337-5129, if you have any questions regarding this letter.

Sincerely,

/RA/

James C. Linville, Chief
Electrical Branch
Division of Reactor Safety

Docket No: 50-219
License No: DPR-16

Enclosure: NRC Inspection Report 50-219/02-011

cc w/encl:
AmerGen Energy Company - Correspondence Control Deck
Vice President - Oyster Creek
Licensing - Vice President, Exelon Corporation
Director-Licensing
Manager, Regulatory Assurance
New England Coalition Staff
BNE Manager, State of New Jersey
N. Cohen, Coordinator - Unplug Salem Campaign
E. Gbur, Coordinator - Jersey Shore Nuclear Watch
E. Zobian, Coordinator - Jersey Shore Anti Nuclear Alliance

Distribution w/encl: **(VIA E-MAIL)**
Region I Docket Room (with concurrences)
R. Summers, DRP - NRC Senior Resident Inspector
H. Miller, RA
J. Wiggins, ORA
J. Rogge, DRP
R. Barkley, DRP
L. Larche, DRP
T. Bergman, OEDO
S. Richards, NRR
P. Tam, Acting PM, NRR
T. Colburn, Backup PM, NRR
W. Lanning, DRS
R. Crlenjak, DRS
J. Linville, DRS
C. Cahill, DRS

DOCUMENT NAME: C:\ORPCheckout\FileNET\ML030240554.wpd
After declaring this document "An Official Agency Record" it **will** be released to the Public.
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE	RI:DRS		RI:DRS		RI:DRP		RI/DRS			
NAME	CCahill		JLinville		JRogge		~~Cobey/Schmidt~~			
DATE	01/23/03		01/23/03		01/24/03		01/ /03			

OFFICIAL RECORD COPY

U.S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket No:	50-219
License No:	DPR-16
Report No:	50-219/02-011
Licensee:	AmerGen Energy Company, LLC (AmerGen)
Facility:	Oyster Creek Nuclear Generating Station
Location:	Forked River, New Jersey
Dates:	December 16, 2002 - January 10, 2003
Inspectors:	Christopher G. Cahill, Senior Reactor Inspector, DRS (Team Leader) Aniello Della Greca, Senior Reactor Inspector, DRS Roy Fuhrmeister, Senior Reactor Inspector, DRS Timothy O'Hara, Reactor Inspector, DRS Mark Marshfield, Resident inspector, R. E. Ginna Station
Approved by:	James C. Linville, Chief Electrical Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000219/02-011; on 12/16/2002 - 1/10/2003; Oyster Creek Nuclear Generating Station; Triennial fire protection inspection report.

The report covered a two week team inspection by specialist inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 3, dated July 2000.

A. Inspector Identified Findings

No findings of significance were identified

B. Licensee Identified Violations

None

Report Details

Background

This report presents the results of a triennial fire protection inspection conducted in accordance with NRC Inspection Procedure (IP) 71111.05, "Fire Protection." The objective of the inspection was to assess whether AmerGen Energy Company, LLC. has implemented an adequate fire protection program and that post-fire safe shutdown capabilities have been established and are being properly maintained at the Oyster Creek Nuclear Generating Station (OCNGS). The following fire zones (FZ) were selected for detailed review based on risk insights from the Oyster Creek Individual Plant Examination of External Events (IPEEE):

- Cable Spreading Room (OB-FZ-4)
- "A" 480 VAC Switchgear Room (OB-FZ-6A)
- Reactor Building 51 ft Elevation (RB-FZ-1D)

This inspection was a reduced scope inspection in accordance with the September 22, 2000, revision to IP 71111.05, "Fire Protection." Issues regarding equipment malfunction due to fire-induced failures of associated circuits were not inspected. Criteria for review of fire-induced circuit failures are currently the subject of a voluntary industry initiative. The definition of associated circuits of concern used was that contained in the March 22, 1982, memorandum from Mattson to Eisenhut, which clarified the requests for information made in NRC Generic Letter 81-12.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems

1R05 Fire Protection (71111.05)

.1 Programmatic Controls

a. Inspection Scope

During tours of the Oyster Creek Nuclear Generation Station (OCNGS) facility, the team observed the material condition of fire protection systems and equipment, the storage of permanent and transient combustible materials, and control of ignition sources. The team also reviewed the procedures that controlled hot-work activities and combustibles at the site. This was accomplished to verify that OCNGS was maintaining the fire protection systems, controlling hot-work activities, and controlling combustible materials in accordance with their fire protection program.

b. Findings

No findings of significance were identified.

.2 Passive Fire Barriers

a. Inspection Scope

During tours of the facility, the team evaluated the material condition of fire walls, fire doors, and fire barrier penetration seals to ensure that AmerGen Energy was maintaining the passive features in a state of readiness.

The team randomly selected three fire barrier penetration seals for detailed inspection to verify proper installation and qualification. The team reviewed associated design drawings, test reports, and engineering analyses. The team compared the observed in-situ seal configurations to the design drawings and tested configurations. Additionally, the team compared the penetration seal ratings with the ratings of the barriers in which they were installed. This was accomplished to verify that the licensee had installed the selected penetration seals in accordance with their design and licensing bases.

b. Findings

No findings of significance were identified.

.3 Fire Detection Systems

a. Inspection Scope

The team performed a walkdown of the selected fire areas to verify the existence and adequacy of fire detection in the selected fire areas. In addition, the team reviewed completed surveillance procedures to verify the adequacy and frequency of fire detection component testing. This review was performed to ensure that the fire detection systems for the selected fire areas met their design and licensing bases.

b. Findings

No findings of significance were identified.

.4 Fixed Fire Suppression Systems and Equipment

a. Inspection Scope

The team evaluated the adequacy of the automatic total flooding Halon system in the A 480 VAC Switchgear Room and the open head deluge systems in the Cable Spreading Room and the Reactor Building 51' Elevation by performing a walkdown of the system, review of initial system discharge testing, and reviews of functional testing. This review was performed to verify that the selected fixed suppression systems met their design and licensing bases.

b. Findings

No findings of significance were identified.

.5 Manual Fire Suppression Capability

a. Inspection Scope

The team walked down selected standpipe systems, hose reels and portable fire extinguishers to determine the material condition of manual fire fighting systems. Diesel fire pump flow and pressure tests were also reviewed by the team to ensure the pumps were meeting design requirements. The team reviewed the pre-fire plans for the target fire areas to verify accuracy of the plans versus the installed fire protection features in the selected fire areas.

The team inspected the fire brigade's protective ensembles, self-contained breathing apparatus (SCBA), portable communications equipment and various other fire brigade equipment to determine material condition and operational readiness of equipment for fire fighting.

The team reviewed Fire Brigade Initial Training and Fire Brigade Continuing Training course materials to verify appropriate training was being conducted for the station firefighting personnel.

b. Findings

No findings of significance were identified.

.6 Post-Fire Safe Shutdown Emergency Lighting and Communications

a. Inspection Scope

The team observed the placement and aiming of 8-hour emergency lighting units (ELUs) throughout the selected fire zones to evaluate their adequacy for illuminating access and egress pathways and equipment requiring local operation for post-fire safe shutdown. In addition, during the alternate shutdown procedure walk through documented in Section .8, Alternative Shutdown Capability," the team verified that emergency lights were provided where needed.

b. Findings

No findings of significance were identified.

.7 Electrical Raceway Fire Barrier Systems (ERFBS)

a. Inspection Scope

The team walked down accessible portions of the selected fire areas to observe material condition of the electrical raceway fire barrier systems. Additionally, the team reviewed design and installation drawings, engineering analyses and surveillance test procedures for selected items. The NRC safety evaluations of fire protection features for OCNGS were also reviewed by the team. This review was performed to verify that the selected items of the fire barrier system met their design and licensing bases.

b. Findings

No findings of significance were identified.

.8 Alternative Shutdown Capability

a. Inspection Scope

The team reviewed the fire response procedures and emergency operating procedures (EOPs) for the selected fire areas to evaluate the methods and equipment used to achieve hot shutdown following a fire. The team also reviewed piping and instrumentation drawings for post-fire safe shutdown systems to identify required components for establishing flow paths, to identify equipment required to isolate flow diversion paths, and to verify appropriate components were properly evaluated and included in the safe shutdown equipment list. The team also reviewed selected alternate shutdown components and their control circuits to ensure that proper isolation was provided for alternate shutdown capability and performed field walkdowns to evaluate the protection of the equipment from the effects of fires.

Post-fire shutdown procedures for the selected areas were also reviewed to determine if appropriate information was provided to plant operators to identify protected equipment and instrumentation and if recovery actions specified in post-fire shutdown procedures considered manpower needs for performing restorations and area accessibility. The team also reviewed training lesson plans for the alternative shutdown procedures, discussed training with licensed operators, reviewed selected alternate shutdown equipment tests, reviewed the adequacy of shift manning, and evaluated the accessibility of the alternative shutdown operating stations and required manual action locations.

Specific procedures reviewed included 2000-ABN-3200.29, “Response to Fire,” Revision 29, 2000-ABN-3200.30, “Control Room Evacuation,” Revision 21, and 346, “Operation of the Remote and Local Shutdown Panels,” Revision 9.

A procedure walkdown was performed for procedure 2000-ABN-3200.30, “Control Room Evacuation,” Revision 21. The walkdown was performed by licensed operators and focused primarily on the portion of the procedure associated with achieving stable hot shutdown conditions. Plant operators were accompanied by NRC team members during the walkdown and the approximate time for critical steps, such as establishing isolation condenser operation and reactor vessel makeup, were noted and evaluated to assess the ability of the operators to maintain plant parameters within procedural limits.

b. Findings

No findings of significance were identified.

.9 Safe Shutdown Capability

a. Inspection Scope

The team reviewed the Oyster Creek Nuclear Generating Station Fire Hazard Analysis Report, Document No. 990-1746, Revision 11, and associated Safe Shutdown Analysis to confirm that the licensee had identified the methods and the structures, systems, and components (SSCs) necessary to achieve hot shutdown and cold shutdown, following postulated fires in the selected risk significant fire zones. The team further reviewed the applicable flow diagrams, instrument drawings and the Appendix R Fire Evaluation Circuit/Component Location Summary (Safe Shutdown Components List) to identify the components required for establishing the specified flow paths and for isolating the flow diversion paths. The team sampled sections of operating procedures associated with shutdown following a fire, to confirm the availability of selected components required for different fire scenarios.

The team verified that the applicable requirements of 10 CFR 50, Appendix R, Sections III.G and III.L for achieving and maintaining safe shutdown were properly addressed. The team verified that systems necessary to assure the safe shutdown functions of reactivity control, reactor coolant makeup, reactor heat removal, and process monitoring were protected within or independent of the selected fire zones. Where deviations from Appendix R requirements were identified, the team verified that the deviations had been approved and that conditions required by the deviations were implemented and being maintained.

b. Findings

No findings of significance were identified.

.10 Safe Shutdown Circuit Analyses

a. Inspection Scope

For the “A” 480 VAC Switchgear Room (OB-FZ-6A) and Reactor Building 51 ft Elevation (RB-FZ-1D), the inspectors reviewed the licensee’s safe shutdown analysis (SSA) to ensure that at least one post-fire safe shutdown success path, free of fire damage, was available in the event of a fire. This included a review of manual actions required to achieve and maintain hot shutdown conditions and to make the necessary repairs to reach cold shut down within 72 hours. The inspectors also reviewed selected procedures, calculations and observed simulator scenarios to ensure that adequate direction was provided to the operators to perform the necessary manual actions. Factors, such as timing, access to the equipment, and the availability of procedures, were considered in the inspectors’ review.

b. Findings

The team identified an unresolved item concerning the acceptability of the licensee's use of manual actions to remotely operate equipment necessary for achieving and maintaining hot shutdown, in lieu of providing protection to the cables associated with that equipment, as a method of complying with 10 CFR Part 50, Appendix R, Section III.G.2.

Title 10 of the Code of Federal Regulations (CFR), Part 50.48, "Fire Protection," and 10 CFR Part 50, Appendix R, "Fire Protection Program for Nuclear Power Facilities Operating Prior to January 1, 1979," establish specific fire protection features required to satisfy 10 CFR Part 50, Appendix A, General Design Criterion 3, "Fire Protection." Appendix R applies to licensed nuclear power stations that were operating prior to January 1, 1979, which includes OCNGS. Section III.G.2 of Appendix R to 10 CFR Part 50 requires that, "where cables or equipment, including associated non-safety circuits that could prevent operation or cause maloperation due to hot shorts, open circuits, or shorts to ground, of redundant trains of systems necessary to achieve and maintain hot shutdown conditions are located within the same fire area outside of primary containment, one of the following means of ensuring that one of the redundant trains is free of fire damage shall be provided:

(1) Separation of cables and equipment and associated non-safety circuits of redundant trains by a fire barrier having a 3-hour rating. Structural steel forming a part of or supporting such fire barriers shall be protected to provide fire resistance equivalent to that required of the barrier;

(2) Separation of cables and equipment and associated non-safety circuits of redundant trains by a horizontal distance of more than 20 feet with no intervening combustible or fire hazards. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area; or

(3) Enclosure of cable and equipment and associated non-safety circuits of one redundant train in a fire barrier having a 1-hour rating. In addition, fire detectors and an automatic fire suppression system shall be installed in the fire area;

During a review of FHA Appendix A, section 2.2, and section 3.1.4.b, the team found that OCNGS relied on a manual operator action, without an approved exemption from the regulations, to defeat the spurious operation of an electromatic relief valve (EMRV) for fire conditions in reactor building elevation 51 feet (RB-FZ-1D). The manual action required the operators to manually open the Core Spray System ll, parallel path injection valve, V-20-21, in the event that a fire caused the spurious operation of an EMRV. The license did not consider the cables associated with this equipment to be necessary for achieving and maintaining hot shutdown conditions, and did not provide the protection from fire damage specified in Section III.G.2 of Appendix R to 10 CFR Part 50. The team concluded that the identified issues concerning potential effects of fire damage on associated circuits related to safe shutdown components and the resultant spurious actuation of such components was an unresolved item (URI). This issue will remain unresolved pending the completion of the NRC/industry review and resolution of issues affecting safe shutdown associated circuits and manual actions, or the satisfactory re-

analysis of the OCNGS SSA. This issue was placed into the licensee's corrective action program as CAP No. 02003-0035. **(URI 50-219/02-011-01)**

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems

.1 Corrective Actions for Fire Protection Deficiencies

a. Inspection Scope

The team reviewed the fire impairments log, open corrective maintenance work orders for fire protection and safe shutdown equipment, selected corrective action reports for fire protection and safe shutdown issues to evaluate the prioritization for resolving fire protection related deficiencies and the effectiveness of corrective actions. The team also reviewed recent Quality Assurance Audits, and Engineering Self-Assessments of the fire protection program to determine if the licensee was identifying program deficiencies and implementing appropriate corrective actions.

b. Findings

No findings of significance were identified.

4OA3 Event Followup

.1 (Closed) LER50-219/02-03-00 Insufficient Appendix R Electrical Separation due to Sand Erosion

On October 10, 2002, the licensee discovered that a void had been created beneath a portion of the two 480 VAC switchgear rooms. Because of the void, 10 CFR Part 50, Appendix R electrical separation criteria were no longer met. The licensee implemented appropriate immediate compensatory and planned long term corrective actions. No new findings were identified in the teams review. This finding constitutes a violation of minor significance that is not subject to enforcement action in accordance with section IV of the NRC's Enforcement Policy. The licensee documented the problem in CAP 02002-1551. This LER is closed.

4OA6 Meetings, Including Exit

.1 Exit Meeting Summary

The team presented their preliminary inspection results to Mr. E. Harkness and other members of the Oyster Creek Nuclear Generating staff at an exit meeting on January 10, 2003.

KEY POINTS OF CONTACT

OC Nuclear Generating Station

E. Harkness	Vice President, Oyster Creek
R. Larzo	Oyster Creek Team Lead
M. Godknecht	Technical POC
M. Carlson	Program Engineer
A. Herz	Electrical Design Engineer
C. Pragman	Kennett Square Engineering
D. Roberts	Corporate Engineering
H. Sharma	Electrical Design Engineer

Nuclear Regulatory Commission

J. Linville	Chief, Electrical Engineering Branch
R. Summers	Senior Resident Inspector, Oyster Creek
S. Dennis	Resident Inspector, Oyster Creek
D. Frumkin	Fire Protection Engineer, NRR

LIST OF ITEMS OPENED AND CLOSED

Opened

50-219/02-011-01	URI	Spurious Operation of an EMRV and Manual Operation of Core Spray (Section 1R05.8)

Closed

50-219/02-03-00	LER	Insufficient Appendix R Electrical Separation due to Sand Erosion (Section4OA3)

LIST OF DOCUMENTS REVIEWED

Fire Protection Program Documents

120.5, Rev. 13,	Control of Combustibles
990-1746, Rev. 11	Fire Hazard Analysis Report
5000-ADM-7371.01, Rev 5	Fire Protection Inspection & Audit
OP-AA-201-009, Rev. 2,	Control of Transient Combustible Material
OP-MA-201-007, Rev. 1,	Fire Protection System Impairment Control
OP-AA-201-008, Rev. 1,	Pre-Fire Plans
Special 97-003, Rev. 11,	Oyster Creek Pre-Fire Plans

Calculations/Analyses

3731-030	Appendix R Evaluation for Coordination of Circuit Breakers Located at MCCs or Power Panels, Rev. 2
C-1302-700-5350-003	OC Protective Relays, Rev. 4
C-1302-732-5350-005	OCNGS Class 1E Solid State Trip Device Settings for 480V USS Circuit Breakers, Rev. 6
C-1302-732-E510-048	460 Volt MCC Feeder Breaker Solid State Trip Device SettingOC Battery Bus Coordination, Rev. 4
C-1302-735-5350-008	OC Battery Bus Coordination, Rev. 4
C-1302-810-5450-004	Appendix R Stuck Open EMRV

Drawings

BR-2002, Sh 1	Main Steam System Flow Diagram, Rev. 58
BR-2003, Sh 1	Condensate/Feed System Flow Diagram, Rev. 82
BR-2004, Sh 2	Condensate Transfer System Flow Diagram, Rev. 81
BR-2005, Sh 2	Reactor & Turbine Building Service Water System Flow Diagram, Rev. 86
BR-2005, Sh 4	Emergency Service Water System Flow Diagram, Rev. 73
BR-2006, Sh 1	Reactor Building Closed Cooling Water System Flow Diagram, Rev. 72
BR-2010, Sh 3	Office Building HVAC (480V Swg. Rm.) Flow Diagram, Rev. 23
BR-2010, Sh 4	Control and Cable Spreading Rooms HVAC Flow Diag, Rev. 26
BR-2010, Sh 5	Battery and MG Set Room Ventilation Flow Diagram, Rev. 21
BR 2011, Sh 2	Reactor Building Ventilation Flow Diagram, Rev. 56
BR 3000	Electrical Power Sys - Key One Line Diagram, Rev. 8
BR 3001, Sh 1	Plant Elect Generation - Main One Line Diagram, Rev. 7
BR 3001, Sh 2	Emergency Power Sys - One Line Diagram, Rev. 4
BR 3001A	4160V System One Line Diagram - 4160V Swgr Bus 1A, Rev. 9
BR 3001B	4160V System One Line Diagram - 4160V Swgr Bus 1B and Dilution Plant, Rev. 13
BR 3001C	4160V System One Line Diagram - 4160V Emergency Swgr Bus 1C & 1D, Rev. 0
BR 3002, Sh 1-4	480V System One Line Diagram - 460V Unit Substations
BR 3013, Sh 1-2	AC Vital Power System One Line Diagram - Vital MCC's
BR 3028, Sh 1	125V Station DC System One Line Diagram - 125V DC Distr. Center A & B, MCC DC-1, Rev. 13
BR 3028, Sh 2	24V Station DC System One Line Diagram - Battery Chargers & MCC DC-1, Rev. 7
BR E1102	Emergency Condenser System Electrical Elementary Diagram, Rev. 15
BR E1706	Appendix "R" Safe Shutdown Circuit Routing Reactor Building El 51'-3"
BR E1107	Elementary Diagram Remote Shutdown Panel Transfer Scheme, Rev. 3
BR E1108	Elementary Diagram Remote Shutdown Panel Transfer Scheme, Rev. 12

BR E1111	Elementary Diagram MCC DC-2 A01 - Emergency Condenser Isolation Inlet Valve V-14-33 to NE01-B, Rev. 13
BR E1128	Elementary Diagram 1B3-U062A Service Water Pump 1-2, Rev. 8
BR E1129	Elementary Diagram 1A2-U032B Shutdown Cooling Pump NU02A, Rev. 10
BR E1130	Elementary Diagram 1B2-U045C Shutdown Cooling Pump NU02B, Rev. 10
BR E1131	Elementary Diagram 1B2-U043C CRD Feed Pmp NC08B, Rev. 13
BR E1132	Elementary Diagram 1A2-U033C CRD Feed Pmp NC08A, Rev. 13
BR E1137	Elementary Diagram Local Shutdown Panel LSP-1A2 Transfer Scheme, Rev. 3
BR E1138	Elementary Diagram Local Shutdown Panel LSP-1A2 Transfer Scheme, Rev. 2
EB D-3028,	125V Station DC System One Line Diagram - 125V DC Distr. Center C and MCC DC-2, Rev. 30
DJP FBS	OB-FZ-6A-01, Sheet1, Rev. 0, Isometric Fire Barrier (Mecatiss) “A” 480V SWGR Room
GE 103D4623, Sh 1	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 20
GE 103D4623, Sh 2	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 19
GE 103D4625	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 19
GE 103D4627, Sh 1	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 21
GE 103D4627, Sh 2	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 18
GE 103D4629, Sh 1	AKD-5 Powermaster Switchgear Connection Diagram, Rev. 18
GE 103D5287, Sh 2	Metalclad Switchgear Interconnection Diagram, Rev. 25
GE 103D5287, Sh 3	Metalclad Switchgear Interconnection Diagram, Rev. 29
GE 104D2511, Sh 2	Emergency Diesel Generator No. 1 Connection Diagram, Rev. 7
GE 106D9510, Sh 1	Emergency Diesel Generator No. 2 Connection Diagram, Rev. 16
GE 112C2247	Main Control Room Panels Electrical Conn. Diagram, Sh 4, 7, & 9
GE 112C2248	Connection Diagram - Panel 11 F, Sh 2 & 3
GE 112C3140	Connection Diagram - Panel 8F/9F, Sh 3 & 4
GE 116B8328, Sh 9	480V System Elec Elem Diagram - Main Breaker 1A2M, Rev. 17
GE 116B8328, Sh 11B	Containment Spray System Electrical Elementary Diagram - Containment Spray Pump 1-3, Rev. 23
GE 116B8328, Sh 11C	Containment Spray System Electrical Elementary Diagram - Containment Spray Pump 1-4, Rev. 20
GE 116B8328, Sh 12B	Shutdown Cooling System Electrical Elementary Diagram - Shutdown Pump NU02C, Rev. 17
GE 116B8328, Sh 15D	Core Spray System Electrical Elementary Diagram - Core Spray Booster Pump NZ-03, Rev. 19
GE 116B8328, Sh 17	480V System Elec. Elem Diagram - Main Breaker 1A2M, Rev. 13
GE 148F262, Sh 1	Emergency Condenser Flow Diagram, Rev. 50
GE 148F444, Sh 1	Clean-up Demineralizer System Flow Diagram, Rev. 90
GE 148F711, Sh 1	Reactor Shutdown Cooling System Flow Diagram, Rev. 40
GE 148F712, Sh 1	Reactor Vessel Level/Pressure/Temp Flow Diagram, Rev. 44
GE 148F740, Sh 1	Containment Spray System Flow Diagram, Rev. 41
GE 148F912, Sh 1	Elementary Diagram - Process Instrumentation, Rev. 25

GE 148F912, Sh 3	Reactor Plant Instruments Electrical Elementary Diagram - Process Instrumentation, Rev. 0
GE 157B6350, Sh 72B	480V Switchgear Room Ventilation Electrical Elementary Diagram - FN 56-010, Rev. 3
GE 157B6350, Sh 77B	480V Switchgear Room Ventilation Electrical Elementary Diagram - FN 56-009, Rev. 1
GE 157B6350, Sh 148B	Containment Spray System Electrical Elementary Diagram - Valve V-21-0005, Rev. 4
GE 157B6350, Sh 151B	Emergency Condenser System (Isolation Condenser) Electrical Elementary Diagram - NE01-B Inlet Isol Valve V-14-0032, Rev. 10
GE 157B6350, Sh 152C	Emergency Condenser System (Isolation Condenser) Electrical Elementary Diagram - NE01-B Return Isol Vlv V-14-0037, Rev. 8
GE 157B6350, Sh 157A	Shutdown Cooling System Electrical Elementary Diagram - Inlet Isolation Valve V-17-0019, Rev. 10
GE 157B6350, Sh 157B	Shutdown Cooling System Electrical Elementary Diagram - Outlet Isolation Valve V-17-0054, Rev. 6
GE 157B6350, Sh 158B	Core Spray System Electrical Elementary Diagram - Core Spray Pump Suction Valve V-20-0033, Rev. 2
GE 157B6350, Sh 161	Core Spray System Electrical Elementary Diagram - Core Spray Pump Discharge Valve V-20-0018, Rev. 18
GE 157B6350, Sh 164B	Core Spray System Electrical Elementary Diagram - Valve V-20-0026, Rev. 7
GE 157B6350, Sh 166	Containment Spray System Electrical Elementary Diagram - Containment Spray Pump Suction Valve V-21-0003, Rev. 13
GE 157B6350, Sh 168A	Containment Spray System Electrical Elementary Diagram - Pressure Suppression Chamber Spray Valve V-21-0015, Rev. 2
GE 157B6350, Sh 168B	Containment Spray System Electrical Elementary Diagram - Containment Spray Valve V-21-0013, Rev. 3
GE 157B6350, Sh 209	Core Spray System Electrical Elementary Diagram - Core Spray Parallel Isolation Valve V-20-0021, Rev. 21
GE 157B6350, Sh 210	Core Spray System Electrical Elementary Diagram - Core Spray Parallel Isolation Valve V-20-0041, Rev. 20
GE 157B6397	Rx Shutdown Cooling System Electrical Elementary Diagram, Sh 4, 5, 9, 10, 11, & 12
GE 197E871	Scram Discharge Volume System - Control Rod Drive Hydraulic System and Nitrogen Charging System Flow Diagram, Rev. 28
GE 223R0173	4160V System Electrical Elementary Diagram, Sh 5, 11, 13, 14, 17A, 17D, 19, 20, 22, and 23
GE 223R0173, Sh 16B	Emergency Service Water System Electrical Elementary Diagram, Emergency Service Water Pump 1-4, Rev. 14
GE 223R0173, Sh 24	Core Spray System Electrical Elementary Diagram, Core Spray Pump NZ01-B, Rev. 23
GE 223R0173, Sh 26	Core Spray System Electrical Elementary Diagram, Core Spray Pump NZ01-D, Rev. 19
GE 237E487	Control Rod Drive System Flow Diagram, Rev. 64
GE 237E798	Recirculation System Flow Diagram, Rev. 33
GE 719E251	Panel ER18A Connection Diagram, Sh 1 & 2
GE 719E252	Panel ER18B Connection Diagram, Sh 1 & 2

GE 729E182, Sh 2	Auto Depressurization Sys Electrical Elementary Diagram - South Header Intermediate Setpoint NR 108B, V-1-0174, Rev. 19
GE 729E182, Sh 4	Auto Depressurization Sys Electrical Elementary Diagram - North Header Lo Setpoint NR 108D, V-1-0176, Rev. 2
GE 885D781	Core Spray System Flow Diagram, Rev. 71
GE 915E273	Fuel Level Instrument System Loop Diagram, Sh 2A and 2B
13432.44-EE-06, Sh 2	Connection and Wiring Diagram Digital PC2 & PC7 Isolator, Rev. 8
15081.02-ETLD-005, Sh 1	RPS/ECCS/ESF Instr. Upgrade Test Loop Diagram, Rev. 3
15361.04-DTLD-001, Sh 1	Test Loop Diagram Suppression Chamber Level, Rev. 1
3D-622-42-004	Reactor Plant Instrument Loop Diagram TE-622-1020 Fuel Zone Level Channel “C”, Rev. 2
3D-622-42-005	Reactor Plant Instrument Loop Diagram TE-622-1021 Fuel Zone Level Channel “D”, Rev. 2
3E-200-08-016	RPV & Containment EOP/SAMG Reference and Action Levels, Rev. 0
3E-622-21-1000	Reactor Vessel Instruments Fuel Zone Channels C & D Flow Diagram, Rev. 4
3E-822-21-1000	Standby Gas Treatment Flow Diagram, Rev. 10
3E-911-41-040	Appendix R Safe Shutdown Hot Shutdown Paths - Paths 1 & 2, Rev. 9
3E-911-41-041	Appendix R Safe Shutdown Hot Shutdown Paths - Paths 3 & 4, Rev. 6
3E-911-41-042	Appendix R Safe Shutdown Cold Shutdown Paths - Paths 1 & 2, Rev. 10
3E-911-41-043	Appendix R Safe Shutdown Cold Shutdown Paths - Path 3, Rev. 7
3E-911-41-044	Appendix R Safe Shutdown Hot Shutdown Paths - Path 5, Rev. 4
3431-S762-0	Partition Wall Between “A” & “B” 480V Switchgear Room - Plan & Elev.
7023-56742-53	Front View - Remote Shutdown Panel, Rev. 4
7023-56743-33	Panel Front View - Local Shutdown Panel LSP-1A2, Rev. 2
7023-56744-33	Panel Front View - Local Shutdown Panel LSP-1AB2, Rev. 2
7023-56745-33	Panel Front View - Local Shutdown Panel LSP-1B3, Rev. 3
7023-56746-33	Panel Front View - Local Shutdown Panel LSP-1B32, Rev. 4
7023-56747-33	Panel Front View - Local Shutdown Panel LSP-1D, Rev. 3
7023-56748-33	Panel Front View - Local Shutdown Panel LSP-DG2, Rev. 3
7023-56752-43, Sh 1-3	Connection Diagram - Local Shutdown Panel LSP-1A2, Rev. 7
7023-56767-53, Sh 1-3	Remote Shutdown Panel Wiring & Connection Diagram
7096-1C-1001	Instrument Schematic Diagram Suppression Pool Temp. Monitoring System, Rev. 4
EM-8393039, Sh 5	Emergency Diesel Generator No. 1 Electrical Elementary Wiring Diagram
EM-8397907, Sh 1-7	Emergency Diesel Generator No. 2 Electrical Elementary Wiring Diagram

Procedures

2000-ABN-3200.30	Control Room Evacuation, Rev. 20 & 21
346	Operation of the Remote and Local Shutdown Panels, Rev. 9
636.1.010	Diesel Generator Inspection (24 Months), Rev. 21
658.4.002	Fire Brigade and Safe Shutdown Radio Test, Rev. 21
680.4.002	Local Shutdown Panel LSP-1AB2 Functional Test, Rev. 4
680.4.003	Local Shutdown Panel LSP-1B3 Functional Test, Rev. 9
680.4.004	Local Shutdown Panel LSP-1A2 Functional Test, Rev. 9
680.4.006	Remote Shutdown Panel Functional Test - Train B, Rev. 1
680.4.009	Local Shutdown Panel Functional Test for Control Power Transfer and Isolation Condenser Valves, Rev. 3
680.4.010	Local Shutdown Panel LSP-1B32 Functional Test, Rev. 1
680.4.011	Local Shutdown Panel LSP-1D Functional Test, Rev. 2
CC-AA-209	Fire Protection Program Configuration Change Review, Rev. 1

Completed Tests/Surveillance

636.1.010	Diesel Generator Inspection (24 Months), Revision 21, Completed April 4, 2002, Work Order R0808787
680.4.002	Local Shutdown Panel LSP-1AB2 Functional Test, Rev. 4, Completed November 23, 2002, Work Order R0809240
680.4.003	Local Shutdown Panel LSP-1B3 Functional Test, Rev. 9, Completed October 20, 2002, Work Order R0809241
680.4.004	Local Shutdown Panel LSP-1A2 Functional Test, Rev. 9, Completed October 15, 2002, Work Order R0809243
680.4.006	Remote Shutdown Panel Functional Test - Train B, Rev. 1, Completed October 22, 2002, Work Order R080406A
680.4.009	Local Shutdown Panel Functional Test for Control Power Transfer and Isolation Condenser Valves, Rev. 3, Completed June 21, 2001, Job Order No. 00549058
680.4.010	Local Shutdown Panel LSP-1B32 Functional Test, Rev. 1, Completed December 21, 2000, Job Order No. 00546032
680.4.011	Local Shutdown Panel LSP-1D Functional Test, Rev. 2, Completed October 20, 2002, Work Order R0809253
SPT 477/9	Simulated Fire in the Main Control Room Use of Local and Remote Shutdown Panels

Engineering Evaluations/Modifications/Safety Evaluations/Change Requests

ECR OC 01-00637 000	Power hydrogen Seal Oil Pump from MCC 1A13
ECR OC 01-00669 002	Automatic Shutdown of A/B Battery Room Fans
ECR OC 01-00390 000	Replace No. 1 Fire Diesel Engine & Controller IAW PIMS H750
OC-CCD-403042-001,	Thermo-Lag Cable Raceway Fire Barrier Upgrades/Modifications, Rev. 3
BM TE-02, Rev. 0,	Mecatiss MTS-1 Fire Barriers
BM TE-04, Rev. A,	Upgrade of MPF-60/TSI Covered Conduits Passing Through Silicone Foam Penetration Seals
BM TE-05, Rev. B,	Bounding Analysis for UL Test Deck 7
OC 01-00682 000	Evaluate Pen Seals 128 & 129

OC 01-01154 000	Evaluate Pen Seals No. 675 and No. 676
OC 01-01153 000	Evaluate Pen Seals No. 625 and No. 626
OCMM-402728-007	Appendix R Deviations - EMRV Disable Control Switches and Reactor Water Cleanup System Isolation Valves
SDD-OC-730A	Modification to Circuit Breaker Coordination for Compliance with Appendix R, Rev. 3
SE-402728-009 Rev. 1	Modification of Appendix R Shutdown Path
SE-945100-365, Rev. 0	Conduct of Operations Procedure; Fire Hazards Analysis; Control Room Evacuation Procedure/Safe Shutdown From Outside the Control Room

Procedures

346, Rev. 9	Operation of the Local and Remote and Local Shutdown Panels
645.4.001, Rev. 49	Fire pump No. 1 Operability Test
645.4.018, Rev. 48	Fire pump Monitoring Test
645.6.020, Rev. 7	Redundant Fire Protection Water Supply Pump Functional Test
645.4.036, Rev. 2	Fire Pump No. 2 Operability Test
645.6.012, Rev. 26	Fire Pump Functional Test
2000-ABN-3200.29, Rev. 29	Response to Fire
2000-ABN-3200.30, Rev. 21	Control Room Evacuation
2400-GMM-3681.04	Inspection and Maintenance of Portable Fire Extinguishers
2400-SMM-3681.03	Addition of FPPF Diesel Additive to Emergency Fire Diesel Fuel Tanks During Winter Months

Training Documents

752.0002, Rev. 4	Initial Fire Brigade Training
750.0001, Rev. 9	Fire Brigade Response to Fire, Available Equipment, Fire Fighter Safety
750.0002, Rev. 4	Fire Behavior and Fire Extinguishment
750.0004, Rev. 4	Forcible Entry, Search and Rescue, Overhaul, and Salvage
750.0006, Rev. 6	Fire Extinguisher Use, Fire Watch Requirements
750.0008, Rev. 2	Vehicle and Trash Fires
750.0010, Rev. 6	Line Fire training
750.0011, Rev. 0	Toxic Elements, Ventilation, SCBA Review
750.0015, Rev. 2	Fire Brigade Response to Fires Involving Radiological Contamination & Hazardous Materials Spills or Releases
750.0016, Rev. 0	Available Fire Fighting Equipment and Practical Exercises
750.0017, Rev. 1	Forcible Entry, Ventilation, Overhaul and Salvage
750.0021, Rev. 0	Rapid Intervention Team
750.0020, Rev. 0	Super Pass II - Personal Alert Safety System

Work Orders

R2029416, Fire Extinguishers Inspection - Oyster Creek
R0801050, Oyster Creek Site Portable Fire Extinguishers

Corrective Action Program Documents

CAP O2002-1732	CAP O2002-1698	CAP O2002-1421	CAP O2002-1332
CAP O2002-1373	CAP O2002-1942	CAP02002-1886*	CAP 02002-1987*

CAP 02002-1988*	CAP O2002-1991*	CAP O2002-1997*	CAP O2002-1998*
CAP 02003-0035*	CAP O2003-0037*	CAP O2003-0042*	AR A 2018081*
AR A 2050814*	AR A 2050957*	AR A 2052105*	AR A 2052106*
AR A 2052156*	AR A 2052184*	AR A 2052187*	AR A 2052188*
AR A 2052427*			

* indicates corrective actions issued for inspection identified issues

Test Reports

Underwriter's Laboratories Report - 2/96 Test Deck No. 1
Underwriter's Laboratories Report - 2/96 Test Deck No. 5
Underwriter's Laboratories Report - 2/96 Test Deck No. 7
Test Procedure TP 447/5, Rev. 0

Quality Assurance Audits and Surveillance

NOA-OC-01-3Q	Continuous Assessment Report July - September 2001
NOA-OC-02-3Q	Continuous Assessment Report July - September 2002
S-OC-00-05	Fire Protection
SA-2001-5115	Fire Protection
SA-2001-5133	Fire Protection

Miscellaneous Documents

ISORG Report 00-03	Assessment of Safe Shutdown Staffing Requirements at Oyster Creek
P1516 (Draft)	Oyster Creek Nuclear Generating Station Fire Safe Shutdown Cable Location
---	Cable Routing Sheets for selected components
NFPA 10-1975	
NFPA 12A-1977	
NFPA 13-1976	

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CAP	Corrective Action Program
DRS	Division of Reactor Safety
ELU	Emergency Lighting Unit
EMRV	Electromatic Relief Valve
EOP	Emergency Operating Procedure
EREBS	Electrical Raceway Fire Barrier System
FHAR	Fire Hazards Analysis Report
FZ	Fire Zone
IEEE	Institute of Electrical and Electronics Engineers
IP	Inspection Procedure
IPEEE	Individual Plant Examination of External Events
NFPA	National Fire Protection Association
NRC	Nuclear Regulatory Commission
OCNGS	Oyster Creek Nuclear Generation Station
P&ID	Piping and Instrumentation Drawing
QA	Quality Assurance
SCBA	Self-Contained Breathing Apparatus
SER	Safety Evaluation Report
SSA	Safe Shutdown Analysis
SSC	Structures, Systems, Components
SSCL	Safe Shutdown Component List
UL	Underwriters Laboratories
URI	Unresolved Item